

**REMARKS**

The Office Action dated November 30, 2005, has been reviewed in detail and the application has been amended in the sincere effort to place the same in condition for allowance. Reconsideration of the application and allowance in its amended form are requested based on the following remarks.

Applicant retains the right to pursue broader claims under 35 U.S.C. §120.

Applicant has provided a unique solution with respect to problems regarding CUTTING INSERT AND USE THEREOF. Applicant's solution is claimed in a manner that satisfies the requirements of 35 U.S.C. §103.

**Telephonic Interview:**

The undersigned would like to sincerely thank Examiner Daniel Howell and Examiner Sara Addisu for the courtesies extended during a telephonic interview between the Examiners and the undersigned on February 28, 2006. During the telephonic interview, independent Claims 1 and 17 were primarily discussed. At that time distinctions of the present invention were pointed out by the undersigned as to

why the present invention as claimed distinguished over the applied prior art.

An official agreement was not reached between the Examiners and the undersigned as to the allowability of Claims 1 and 17. However, the undersigned proposed the filing of an affidavit or declaration from the inventor in support of the argument that persons of ordinary skill in the art of cutting insert technology believed, at the time of the filing of the priority application, German Patent Application No. 101 42 049.8, that it was not possible to make a useable cutting insert by the joining of a ceramic cutting body to a cemented carbide base body. In response to this proposal, Examiner Howell indicated that such an affidavit or declaration would probably receive favorable consideration in support of such an argument if presented in an amendment.

Accordingly, submitted herewith is a Declaration Under 37 CFR 1.132 signed by the inventor, Mr. Werner Penkert. It should be noted that in the caption of the declaration Mr. Penkert made a handwritten alteration to the title to indicate to the undersigned a desired correction to the title, which alteration should not be considered as an attempt to amend the title. However, the title has

been amended herein.

The telephonic interview is further summarized below in the section entitled "Recordation of the Substance of the Telephonic Interview."

**Rejection of Claims 1 and 17 Under 35 U.S.C. §103:**

Claims 1 and 17 were rejected under 35 U.S.C. §103 as being unpatentable over U.S. Patent 4,632,606 to Lagerberg in view of U.S. Patent 4,714,385 to Komanduri. Specifically, the Examiner stated that Lagerberg shows a cutting insert 13 that has a hard material wafer 24 that is preferably made of hard metal, ceramics, or diamond. However, Lagerberg, as stated by the Examiner, does not teach or suggest what material is to be used for the cutting insert body 23. Consequently, the Examiner cited Komanduri (column 1, lines 34-36 and 58-63), which generally discloses a cutting insert having a thin diamond or cubic boron nitride (CBN) layer 11 that is attached to a cemented carbide base structure 10. The Examiner stated that it would have been obvious to modify the cutting insert of Lagerberg to make the base body of the cutting insert out of cemented carbide as taught by Komanduri.

As stated above, a Declaration Under 37 CFR 1.132 signed by the inventor, Mr. Penkert, is submitted herewith to overcome the present rejection. Mr. Penkert, who has a degree essentially equivalent to a master's degree in mechanical engineering and approximately 15 years of experience in the field of metal cutting technology, states in the declaration that:

"I observed that persons of ordinary skill in the art of cutting insert technology believed, at the time of the filing of the priority application, German Patent Application No. 101 42 049.8, that it was not possible to make a useable cutting insert by the joining of a ceramic cutting body to a cemented carbide base body because of the high heat and stresses produced during a cutting operation, which high heat and stresses were believed would cause the ceramic cutting body to be loosened from the cemented carbide base body during use of the cutting insert."

In view of the above, it is respectfully submitted that the joining of a ceramic cutting body to a cemented carbide base body to make a useable cutting insert was not thought to be possible by persons of ordinary skill in the art. Therefore, it would not be obvious to persons of ordinary skill in the art to combine Lagerberg and Komanduri because there would be neither a motivation to combine the references nor any reasonable expectation of success since it was believed that such a combination would fail.

In addition, in the interview of February 28, 2006, the undersigned argued that the combination of Lagerberg and Komanduri is improper as there is no suggestion to combine these references. Specifically, Komanduri teaches that a diamond or CBN layer 11 is adhered to a cemented carbide structure 10. Komanduri does not teach adhering ceramic to the cemented carbide structure 10. As stated above, Lagerberg is silent regarding the material, such as cemented carbide, used for the base body. It is respectfully submitted that since there is no specific teaching to combine a ceramic body and a cemented carbide body in either of the references, the combination is improper.

Further, it is respectfully submitted that only by using Applicant's disclosure as a guide would one arrive at such a combination of Lagerberg and Komanduri. Such hindsight analysis is clearly improper.

In view of the above, it is respectfully submitted that Claims 1 and 17, as well as the claims dependent therefrom, distinguish over and are not anticipated or rendered obvious by the applied prior art, either taken singly or in any reasonable combination thereof.

In view of the above, reconsideration and withdrawal of the

present rejection is respectfully requested.

**Rejection of Claims 2-4, 7-9, 21 and 22 Under 35 U.S.C. §103:**

Claims 2-4, 7-9, 21 and 22 were rejected under 35 U.S.C. §103 as being unpatentable over Lagerberg in view of Komanduri, as applied against Claims 1 and 17, and further in view of U.S. Patent No. 4,552,491 to Parker.

First, it is believed that the rejection of Claims 7-9 is improper. Claims 7-9 are dependent claims and, as such, inherently contain all of the limitations of the preceding claims from which they depend. Thus, Claim 7 contains all of the limitations of Claims 1-6, Claim 8 contains all of the limitations of Claims 1-7, and Claim 9 contains all of the limitations of Claims 1-8. However, Claims 5 and 6 were not found to be obvious in view of the present combination of Lagerberg, Komanduri, and Parker. If the features of Claims 5 and 6 are not obvious in view of the present combination, then the claims which depend from Claims 5 and 6, i.e. Claims 7-9, cannot be rendered obvious by the present combination. It is therefore respectfully requested that the present rejection in view of Lagerberg, Komanduri, and Parker against Claims 7-9 be withdrawn.

Lagerberg and Komanduri are discussed above, and it is believed that the combination of these references is improper. It is also respectfully submitted that their combination with Parker is also improper for the reasons set forth herein above and for the reasons as follows.

Parker, as understood, shows a one-piece cutting insert which is made entirely from ceramic material and has a tapered cylindrical shape. The Examiner states that it would have been obvious to one of ordinary skill in the art to modify Lagerberg's invention such that the circular shaped wafers or tips are replaced by wafers having a tapered cylindrical shape such as the shape of the cutting inserts taught by Parker.

It is respectfully submitted that the combination of Lagerberg, Komanduri, and Parker is improper for several reasons. First, there is no suggestion to combine all three of these references absent Applicant's disclosure. Only upon a reading of the specification of the present application would one have possibly been motivated to combine the hard material wafer of Lagerberg with the cemented carbide body of Komanduri, and then further modify the already-modified cutting insert such that the hard material wafer is in the

tapered cylindrical shape of the cutting insert of Parker. Second, the combination of all three of the applied references forms a "mosaic" or "cookbook" combination of applied references. The combination of this many references would not occur to one of ordinary skill in the art of metal cutting technology to yield the present invention as claimed except in hindsight analysis. Third, it is unclear how the various devices and structures of the three references could be combined. To further explain, Lagerberg shows a hard material wafer that is attached to a cutting insert body to form a cutting insert that is held in a tool holder. In contrast, Parker shows a one-piece cutting insert that is made entirely from ceramic material and has an overall tapered cylindrical shape, which cutting insert is held in a tool holder. Parker therefore does not teach a wafer that is mounted or attached to a cutting insert body to form a cutting insert, much less a wafer that has a tapered cylindrical shape. Again, it appears that the Examiner is simply using the Applicant's disclosure to select particular, individual features from devices or structures, though related in technological field, that are not combinable without significantly altering or destroying portions of the devices.

It is therefore respectfully submitted that Claims 2-4 and 21-22,



as well as the claims dependent therefrom, distinguish over and are not anticipated or rendered obvious by the applied prior art, either taken singly or in any reasonable combination thereof.

In view of the above, reconsideration and withdrawal of the present rejection is respectfully requested.

**Rejection of Claims 5 and 6 Under 35 U.S.C. §103:**

Claims 5 and 6 were rejected under 35 U.S.C. §103 as being unpatentable over Lagerberg in view of Komanduri, as applied against Claim 1, and further in view of Parker, as applied against Claims 2-4, and further in view of European Patent Publication No. 0552714, herein after referred to as EP '714.

Lagerberg, Komanduri, and Parker are discussed above, and it is believed that the combination of these references is improper. It is also respectfully submitted that their combination with EP '714 is also improper for the reasons set forth herein above and for the reasons as follows.

EP '714, as understood, shows a one-piece cutting insert which has a partial circle cutting edge that is in the range of 200° to 280°. The Examiner states that it would have been obvious to one of

ordinary skill in the art to modify Lagerberg's invention such that the circular shaped wafers or tips are replaced by wafers having a partial circle cutting edge that extends over a range between 200° to 280° such as the cutting edge of the cutting insert taught by EP '714.

It is respectfully submitted that the combination of Lagerberg, Komanduri, Parker, and EP '714 is improper for several reasons. First, there is no suggestion to combine all four of these references absent Applicant's disclosure. Only upon a reading of the specification of the present application would one have possibly been motivated to combine the hard material wafer of Lagerberg with the cemented carbide body of Komanduri, and then further modify the already-modified cutting insert such that the hard material wafer is in the tapered cylindrical shape of the cutting insert of Parker, and then even further modify the now twice-modified cutting insert to have a partial circle cutting edge as taught by EP '714. Second, the combination of all four of the applied references forms a "mosaic" or "cookbook" combination of applied references. The combination of this many references would not occur to one of ordinary skill in the art of metal cutting technology to yield the present invention as claimed except in hindsight analysis. Third, it is unclear how the

various devices and structures of the four references could be combined. To further explain, Lagerberg shows a hard material wafer that is attached to a cutting insert body to form a cutting insert that is held in a tool holder. In contrast, EP '714 shows a one-piece cutting insert that has a partial circle cutting edge on the end thereof. EP '714 therefore does not teach a wafer that is mounted or attached to a cutting insert body to form a cutting insert, much less a wafer that has a partial circle cutting edge. Again, it appears that the Examiner is simply using the Applicant's disclosure to select particular, individual features from devices or structures, though related in technological field, that are not combinable without significantly altering or destroying portions of the devices.

It is therefore respectfully submitted that Claims 5 and 6, and presumably Claims 7-9 as the earlier rejection thereof appeared to be improper, as well as the claims dependent therefrom, distinguish over and are not anticipated or rendered obvious by the applied prior art, either taken singly or in any reasonable combination thereof.

In view of the above, reconsideration and withdrawal of the present rejection is respectfully requested.

**Rejection of Claims 10-13 Under 35 U.S.C. §103:**

Claims 5 and 6 were rejected under 35 U.S.C. §103 as being unpatentable over Lagerberg in view of Komanduri, as applied against Claim 1, and further in view of Parker, as applied against Claims 2-4, and further in view of EP '714, as applied against Claims 5-9, and further in view of U.S. Patent Application Publication No. 2002/0131832 to Morsch.

Lagerberg, Komanduri, Parker, and EP '714 are discussed above, and it is believed that the combination of these references is improper. It is also respectfully submitted that their combination with Morsch is also improper for the reasons set forth herein above and for the reasons as follows.

Morsch, as understood, shows a cutting insert which, in at least one embodiment, has a clamping surface 598 with a groove and raised portions on either side thereof, which groove is transverse to the longitudinal axis of the cutting insert. The Examiner states that it would have been obvious to one of ordinary skill in the art to modify Lagerberg's invention further such that the cutting insert has a clamping groove as taught by Morsch.

It is respectfully submitted that the combination of Lagerberg,

Komanduri, Parker, EP '714, and Morsch is improper for several reasons. First, there is no suggestion to combine all four of these references absent Applicant's disclosure. Only upon a reading of the specification of the present application would one have possibly been motivated to combine the hard material wafer of Lagerberg with the cemented carbide body of Komanduri, and then further modify the already-modified cutting insert such that the hard material wafer is in the tapered cylindrical shape of the cutting insert of Parker, and then even further modify the now twice-modified cutting insert to have a partial circle cutting edge as taught by EP '714, and then yet further modify the now thrice-modified cutting insert to have a clamping groove as taught by Morsch. Second, the combination of all five of the applied references forms a "mosaic" or "cookbook" combination of applied references. The combination of this many references would not occur to one of ordinary skill in the art of metal cutting technology to yield the present invention as claimed except in hindsight analysis. Third, it is unclear how the various devices and structures of the five references could be combined. Again, it appears that the Examiner is simply using the Applicant's disclosure to select particular, individual features from devices or structures,

though related in technological field, that are not combinable without significantly altering or destroying portions of the devices.

It is therefore respectfully submitted that Claims 10-13, as well as the claims dependent therefrom, distinguish over and are not anticipated or rendered obvious by the applied prior art, either taken singly or in any reasonable combination thereof.

In view of the above, reconsideration and withdrawal of the present rejection is respectfully requested.

**Rejection of Claims 19 and 20 Under 35 U.S.C. §103:**

Claims 19 and 20 were rejected under 35 U.S.C. §103 as being unpatentable over Lagerberg in view of Komanduri, as applied against Claims 1 and 17, and further in view of U.S. Patent No. 6,217,263 to Wiman.

Lagerberg and Komanduri are discussed above, and it is believed that the combination of these references is improper. It is also respectfully submitted that their combination with Wiman is also improper for the reasons set forth herein above and for the reasons as follows.

Wiman, as understood, shows a one-piece cutting insert which

has a rhombic shape and is used for copy turning. The Examiner states that it would have been obvious to one of ordinary skill in the art to modify Lagerberg's invention and use it for copy turning as taught by Wiman.

It is respectfully submitted that the combination of Lagerberg, Komanduri, and Wiman is improper for several reasons. First, there is no suggestion to combine all three of these references absent Applicant's disclosure. Only upon a reading of the specification of the present application would one have possibly been motivated to combine the hard material wafer of Lagerberg with the cemented carbide body of Komanduri, and then further utilize the already-modified cutting insert for copy turning as taught by Wiman. Second, the combination of all three of the applied references forms a "mosaic" or "cookbook" combination of applied references. The combination of this many references would not occur to one of ordinary skill in the art of metal cutting technology to yield the present invention as claimed except in hindsight analysis.

It is therefore respectfully submitted that Claims 19 and 20 distinguish over and are not anticipated or rendered obvious by the applied prior art, either taken singly or in any reasonable combination

thereof.

In view of the above, reconsideration and withdrawal of the present rejection is respectfully requested.

**Objection to the Specification:**

The abstract was objected to for the reasons set forth on page 2 of the Office Action. A new abstract is submitted herewith accordingly to overcome the objection.

**Recordation of the Substance of the Telephonic Interview:**

In order to render this Amendment complete, the following is a recordation of the substance of the telephonic interview conducted with the Examiners on February 28, 2006:

- 1) No exhibits were shown, nor were any demonstrations conducted.
- 2) Primarily, independent Claims 1 and 17 were discussed.
- 3) Primarily, the prior art discussed were U.S. Patents 4,632,606 to Lagerberg and 4,714,385 to Komanduri.
- 4) Generally, Applicant's representative submitted, inter alia, that the prior art discussed did not teach nor suggest a cutting insert



comprising a base body comprising cemented carbide and at least one cutting body comprising ceramic material.

5) Generally no other pertinent matters were discussed.

6) The general outcome of the interview was an agreement between the Examiners and the Applicant's representative that an affidavit or declaration in support of arguments to overcome the rejection would probably be favorably considered.

**Art Made of Record:**

The prior art made of record and not applied has been carefully reviewed, and it is submitted that it does not, either taken singly or in any reasonable combination with the other prior art of record, defeat the patentability of the present invention or render the present invention obvious. Further, Applicant is in agreement with the Examiner that the prior art made of record and not applied does not appear to be material to the patentability of the claims currently pending in this application.

In view of the above, it is respectfully submitted that this application is in condition for allowance, and early action towards that end is respectfully requested.

**Petition for Extension of Time under 37 C.F.R. §1.136(a):**

Applicant hereby petitions for a one-month extension of time until **March 30, 2006**, in which to file the present amendment in response to the Office Action dated November 30, 2005.

**Summary and Conclusion:**

It is submitted that Applicant has provided a new and unique CUTTING INSERT AND USE THEREOF. It is submitted that the claims are fully distinguishable from the prior art. Therefore, it is requested that a Notice of Allowance be issued at an early date.

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Respectfully submitted,

Nils H. Ljungman, Esq.  
Attorney for the Applicant  
Reg. No. 25,997  
Name of person signing certification  
Nils H. Ljungman & Associates  
P.O. Box 130  
Greensburg, PA 15601-0130  
Telephone: (724) 836-2305  
Facsimile: (724) 836-2313